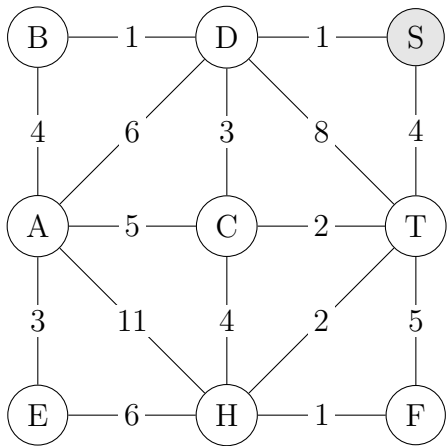


Worksheet 11 (Graph Theory 3): Dijkstra’s Algorithm

1. Use Dijkstra’s Algorithm to determine the shortest (weighted) distance between vertex S and vertex E .

Keep track of the steps of the algorithm in the table to the right of the graph, and then fill in the final shortest distances between S and each other vertex below.

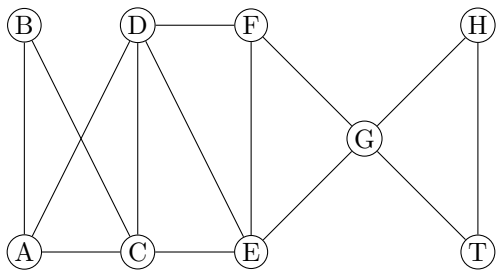


vertex	current/ visited	tentative minimum distance to E	preceding vertex
A			
B			
C			
D			
E			
F			
H			
S			
T			

Length of the shortest path from S to E : _____

Find the shortest path from S to E using the last column in the table.

2. We can also use Dijkstra’s algorithm to find the shortest distance between two vertices in a graph that does not have weights on the edges, by assuming all of the weights are 1. Find a shortest path between vertex A and vertex T. As usual, break ties alphabetically.



vertex	current/ visited	tentative minimum distance to T	preceding vertex
A			
B			
C			
D			
E			
F			
G			
H			
T			

Length of the shortest path from A to T : _____

Find the shortest path from A to T *using the last column in the table.*